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Institute of Laboratory Animal Resources

Final Report

Dorothy D. Greenhouse, Ph.D.

and

Earl W. Grogan, D.V.M.

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19. ABSTRACT (Continue on reverse if necessary and identify by block number) Contract No. DAMD17-84-C-4047 provided part of the core funding for the Institute of Laboratory Animal Resources (ILAR). These core funds share in support of ILAR's standing committees, the Council and the Committee on Animal Models and Genetic Stocks (AMGS); staff and office functions; and special-project development. During the contract period, February 15, 1984, through February 14, 1986, ILAR continued to serve the laboratory animal and biomedical science communities as a key advisory group in matters concerning research animals. ILAR's program goal remained one of providing information that will help to improve animal care, quality, availability, and humane and appropriate use. In pursuit of that goal, ILAR continued to develop guidelines for animal husbandry, health, breeding, and use; published seven issues of the journal <u>ILAR News</u> ; and distributed 7,788 copies of ILAR publications and 1,127 publications relevant to ILAR's mission but written by outside people or organizations. ILAR also continued operation of its Animal Models and Genetic Stocks Information Exchange Program,					
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through which the staff collects and disseminates information on sources of strains and stocks of laboratory animals that are useful for studies of human physiology and pathology, suggests appropriate animal models, promotes the use of correct nomenclature to identify animal strains and stocks, gives referrals to help resolve problems with maintenance and health, and provides information on career opportunities in the laboratory animal sciences and on education and training of personnel. The Council met four times to advise the staff on the conduct of ILAR programs. The AMGS Committee met twice to provide guidance for the animal models program and related projects.

INTRODUCTION

The Institute of Laboratory Animal Resources (ILAR) was founded in 1952 as a national, nongovernmental organization under the auspices of the National Research Council (NRC), the operating arm of the National Academy of Sciences. ILAR develops, collates, and makes available scientific and technical information on laboratory animals, including guidelines for husbandry, health, breeding, and use; descriptions of animal models of human diseases and physiological processes; surveys of facilities and resources; source data on commercial and investigator colony stocks of animals; and correct nomenclature for strains and stocks of animals. The program goal is to provide information that will help to improve the availability, quality, care, and humane and appropriate use of laboratory animals. During its 35-year history, ILAR has established itself as a focal point for the compilation and distribution of information and as a key advisory group in the laboratory animal science field. A framework for governmental and institutional animal-welfare policies has been provided through reports prepared by ILAR committees.

ILAR, like other components of the NRC, conducts its programs through the activities of a small staff and committees of recognized experts in fields relevant to each project. Projects are developed in response to specific requests from government or private agencies or on the initiative of the staff or committees. ILAR programs are financed by contracts and grants from various government and private agencies in the two categories of core support and special-project funding.

Part of ILAR's core support has been provided by Contract No. DAMD17-84-C-4047. These core funds shared in the support of standing committees, staff and office functions in operating the Animal Models and Genetic Stocks Information Exchange Program and publishing ILAR News, and special-project development. Separate funding is normally sought to carry out special projects. Standing committees are the Council, which guides the development and operation of the entire ILAR program, and the Committee on Animal Models and Genetic Stocks, which provides guidance for the animal models program and related projects.

COMMITTEES SUPPORTED WITH CORE FUNDING

Council

ILAR is guided by a 13-member Council made up of experts in laboratory animal medicine, medicine, bioethics, and other biomedical sciences. During the contract period, the Council met four times (May 8, 1984; February 25, 1985; May 17, 1985; and December 16, 1985) to provide comprehensive advice on all aspects of the ILAR program, including proposed and current committee activities and staff initiatives. Particular attention was given to the concerns of the scientific community, the U.S. Congress, the public, and animal rights advocates about the use of laboratory animals. Other matters reviewed included the status of ILAR publications, development or revision of guideline documents, status of ILAR information services, existing and pending legislation affecting laboratory animal resources,

need for guidelines for use of animals by elementary and secondary school children, sponsorship of symposia and workshops, and nominations to ILAR standing committees. Representatives of various federal agencies whose programs involve the use of laboratory animals participated in the February 1985 meeting by invitation.

Committee on Animal Models and Genetic Stocks

The committee was formed in July 1969 in response to recommendations by the Genetics Society of America and the National Institutes of Health (NIH) for the establishment of a central location in which to collect, update, and disseminate information on animal models and genetic stocks that are useful in biomedical research. The committee advises and assists the staff in collecting information for and running the Animal Models and Genetic Stocks Information Exchange Program; suggests topics for programs, symposia, and workshops; provides material on animal models for ILAR News; and evaluates new and emerging developments in biomedical and laboratory animal science that are relevant to ILAR's activities.

During the contract period, the committee met twice (April 3, 1985 and January 9, 1986) to review and provide advice on the operation of the Animal Models and Genetic Stocks Information Exchange Program. It also discussed areas of concern for scientists who maintain colonies of genetically unique animal models. It proposed that a committee be appointed to look at funding and other problems encountered by such scientists and at cost-effective ways to address these problems. As a result of this recommendation, the National Research Council (NRC) agreed to provide support for the Committee on Preservation of Laboratory Animal Resources (described below).

An initiative taken by the committee and endorsed by the Council urged that the Academy and the Institute of Medicine develop and issue statements about the appropriateness of using animals in the biological sciences and medicine and publicize and distribute these statements to scientists, members of Congress, and the public. In response to this effort and to initiatives of individual scientists and scientific organizations, the Committee on the Use of Laboratory Animals in Biomedical and Behavioral Research was established under the aegis of the Commission on Life Sciences and the Institute of Medicine to address the controversial laboratory animal issue.

STAFF ACTIVITIES SUPPORTED WITH CORE FUNDING

Animal Models and Genetic Stocks Information Exchange Program

In addition to active study committees (described below), ILAR maintains a substantial staff activity. With the assistance of members of

the Committee on Animal Models and Genetic Stocks, the staff has established a broad data base and continues to collect information on the location of unique and specialized animal colonies. Since the program's inception in 1971, the staff has responded to many thousands of inquiries from scientists in the United States and abroad. During the contract period ILAR continued to serve biomedical researchers and other users of laboratory animals, in response to individual inquiries, by finding sources of both commonly and less commonly used species for laboratory investigation, suggesting appropriate animal models, promoting the use of correct nomenclature to identify animal strains and stocks, giving references and referrals to help resolve problems with animal maintenance and health, and providing information on career opportunities in the laboratory animal sciences and on education and training of personnel. In the fall of 1984, ILAR staff provided to the Office of Health Affairs, Department of Defense, information on the use of dogs in research and copies of various ILAR documents on care and use of laboratory animals. In addition, between February 15, 1984, and February 14, 1986, the staff distributed 7,788 copies of ILAR publications and 1,127 publications relevant to ILAR's mission but written by outside people or organizations.

ILAR News

The staff-published quarterly journal ILAR News is an important element in ILAR's effort to distribute information pertaining to laboratory animals and their care and use. This journal is circulated worldwide to laboratory animal scientists; biomedical researchers; and institutional, departmental, or unit libraries. It typically contains a review article or articles on animal models of human diseases written by well-known scientists, information about future and past local, national, and international meetings; ILAR, NRC, and general news and announcements; descriptions of recent publications; notices of availability of animals, organs, and tissues; requests for special animal models; proposed and established federal laws, regulations, and policies; lists of reference material available cost-free from ILAR or for sale by the National Academy Press; and other information of interest to people and organizations using laboratory animals. Unique to ILAR News are the "inserts," which comprise individually authored documents or reports by ILAR committees concerning sources of animal models or their care and use. These inserts, which can also be obtained free-of-charge as reprints, provide a means to disseminate to biomedical and laboratory animal scientists information that is not readily available elsewhere.

During the contract period seven issues of ILAR News were completed: Volume 27, Numbers 3 and 4 (Spring and Summer 1984); Volume 28, Numbers 1, 2-3, and 4 (Fall 1984 through Summer 1985); and Volume 29, Numbers 1 and 2 (Fall 1985 and Winter 1986). Articles appearing in these issues are listed below.

Dewsbury, D. A. 1984. Murroid rodents as research animals. ILAR News 28(1):8-15.

Fuller, D. 1985. Trends in primate imports into the United States, 1984. ILAR News 28(4):4-7.

Gill, T. J., III. 1984. Nomenclature of alloantigenic systems in the rat. ILAR News 27(3):11-12.

Gray-Schofield, L., and J. L. Chandler. 1984. Trends in primate imports into the United States, 1983. Including a discussion on worldwide trade in primates. ILAR News 27(4):6-12.

Phillips, J. M., and R. S. Burns. 1984. The MPTP-treated monkey: An animal model of Parkinson's disease. ILAR News 27(3):8-11.

Animal Source Information

Animals for Research - A Directory of Sources, which is compiled by the staff, is one of ILAR's most widely used publications. The tenth edition, published in 1979, lists 187 companies that sell rodents, rabbits, dogs, cats, nonhuman primates, domestic farm animals, birds, other vertebrates, and invertebrates for research. A supplement to that edition was published in the Fall 1980 ILAR News. Another frequently requested compendium developed by ILAR staff, Holders of Inbred and Mutant Mice in the United States; Including the Rules for Standardized Nomenclature of Inbred Strains, Gene Loci, and Biochemical Variants, was published in the Winter 1984 ILAR News. It identifies both commercial and investigator colony sources for approximately 100 inbred strains and substrains and 600 mutant genes and biochemical variants of mice in the United States. It encourages the use of standardized nomenclature of rodents by reprinting the internationally accepted rules. In the first year alone, more than 800 reprints of this document were distributed to biomedical researchers and purchasing agents.

During the contract period, the staff, with the assistance of computer specialists within the NRC, developed a program for automating source data and began to collect and computerize information from both commercial animal suppliers and investigator colonies throughout the United States. A new directory will be published in ILAR News as the eleventh edition of Animals for Research and will also be made available as separate reprints. The first part, dealing with rodents and rabbits, is expected to be published by the end of 1987. Computerization of this information should enable ILAR staff to publish revised listings more frequently, keeping the scientific community up-to-date about sources of animals, with no user charge. Another advantage of this data system is that it will allow all members of the ILAR staff to respond immediately to many of the phone requests for source information by conducting search and retrieval functions while callers briefly hold on the line.

Standardized Nomenclature for Rodents

In 1985, the staff was asked by the International Committee on Standardized Genetic Nomenclature for Mice to undertake maintenance of the international list of holder codes, which are used to correctly designate laboratory rodents. Efforts begun late that year are underway to update addresses and to eliminate duplications that have inadvertently arisen over the years. This activity is important to ILAR's efforts to promote correct identification of rodents through the use of standardized nomenclature.

DOCUMENTS ON CARE AND USE OF ANIMALS SUPPORTED BY SPECIAL FUNDING

A major objective of ILAR is to promote humane, ethical, and appropriate care and use of laboratory animals. One of the ways this is accomplished is through preparation, by ILAR committees, of documents containing guidelines for such care and use. During the contract period, committees worked on the revision or preparation of guidelines.

Guide for the Care and Use of Laboratory Animals

One of the most important ILAR publications is the Guide for the Care and Use of Laboratory Animals, referred to as the Guide. It is a long-standing policy of the U.S. Public Health Service, which funds preparation of the Guide, and other government agencies to require adherence to these guidelines by grantees and contractors in their research use of living, warm-blooded vertebrates. In addition, the American Association for Accreditation of Laboratory Animal Care uses the tenets of the Guide in evaluating the animal facilities of institutions seeking accreditation.

Originally prepared by the Animal Care Panel in 1963 as the Guide for Laboratory Animal Facilities and Care, this document has since been revised by ILAR. In September 1982 ILAR was awarded a contract by the Division of Research Resources, National Institutes of Health (NIH), to prepare a sixth edition of the Guide. A committee of 14 experts in laboratory animal science and recognized research users of laboratory animals was appointed to undertake this revision. Before beginning its task, the committee invited scientists and the public to comment on the Guide at three open meetings, held in Washington, D.C., on May 17, 1983; in San Francisco, California, on July 11, 1983; and in Chicago, Illinois, on July 12, 1983. The comments received at the meetings, as well as all other written comments received, were reviewed and considered by the committee.

In revising the Guide, the committee recognized that it is an evolving document, subject to change as knowledge in laboratory animal science increases. The guidelines were based on established scientific principles, expert opinion, and experience with methods and practices that have proved to be consistent with humane, high-quality animal care. As in

the past, the document was written in general terms, so that its guidelines would be applicable to the wide variety of scientific institutions that use live vertebrates. The new edition of the Guide was reorganized to present the material with greater clarity. When possible, statements and guidelines were cited; where no references were available, the information presented was the product of the collective scientific judgment of the committee. The Guide was published first in the NIH Guide Supplement for Grants and Contracts, Vol. 14, No. 8, June 25, 1985, and as a separate document in July 1985. The committee was dismissed in March 1985.

Guide to Infectious Diseases of Mice and Rats

The 1971 publication entitled A Guide to Infectious Diseases of Mice and Rats is being updated by an ILAR committee funded by the National Cancer Institute. The revision will contain current information on a wide variety of bacterial, viral, mycoplasmal, protozoan, and other infectious diseases of laboratory mice and rats. In addition to information on the agent, clinical signs, pathology, diagnosis, and control, there will be a brief discussion on the way in which each pathogen interferes with research. The report is expected to be published in 1987.

Immunodeficient Rodents: A Guide to Their Immunobiology, Husbandry, and Use

The Committee on Immunologically Compromised Rodents was appointed in July 1984 to develop a report on the management of rodents with immune system defects. Existing rodent models are useful for studying normal function and diseases of the immune system; however, such animals can be difficult to breed and maintain. The committee report is designed to provide comprehensive information to researchers new to the field of immunology and to laboratory animal scientists who maintain immunodeficient animal models. It will discuss all the currently known immunodeficient rodents and describe husbandry techniques and diets required by these models, as well as infectious diseases to which they are especially susceptible. When completed, this report will include updated information on the care of nude mice, thus replacing the 1976 ILAR document on those animals. The emphasis will be on spontaneously occurring models, with a relatively small section on acquired immune deficiencies. It is expected that the report will be published in 1987.

OTHER PROGRAMS SUPPORTED BY SPECIAL FUNDING

Environmental Conditions in Laboratory Animal Rooms

In response to a request from the Veteran's Administration (VA), a committee was formed in April 1982 to provide guidance on a research program on control of environmental conditions in laboratory animal rooms. The committee held its meetings at the VA Medical Center in Memphis, Tennessee, the site chosen by VA for its research project. It evaluated and made recommendations on the VA's 95% complete engineering drawings and

specifications for renovation of a laboratory animal research room and on the research plans. During the time the VA is completing the renovation and equipping the laboratory, the committee's advisory services will not be needed; therefore, the committee was dismissed in September 1984.

National Survey of Laboratory Animal Use, Facilities, and Resources

The Committee for National Survey of Laboratory Animal Use, Facilities, and Resources was appointed in response to a request from NIH that ILAR plan and carry out a national survey on laboratory animal use and related matters. The committee first undertook a pilot study in which the plan for the survey and questionnaire form were developed and validated. The national survey is expected to follow the pilot study, subject to appropriate approvals and funding. This survey, which is similar to surveys carried out by ILAR for NIH in 1968 and 1978, was designed to consider and assess various aspects of animal use, including numbers of animals used, broad scientific purposes for which they are used, status of laboratory animal facilities and resources, and perceived needs in meeting research requirements. The results of the committee's pilot study were transmitted to the sponsoring agency in a June 1986 report.

Preservation of Laboratory Animal Resources

The Committee on Preservation of Laboratory Animal Resources was appointed in response to the perception of members of the scientific community that the future of many colonies of genetically unique animals appears to be at risk. These scientists are concerned that genetic stocks potentially valuable for the study of human diseases will be lost, development of new models will be curtailed, and already existing models will become less available. The task of this committee, which is supported with NRC funds, is to study the current situation for maintaining colonies of genetically unique animals that are potentially useful in biomedical research, document any models lost as a result of decreased funding or for other reasons, evaluate the long-term effects of such a loss on the biomedical research effort, and recommend procedures by which genetic stocks might be maintained in a cost-effective manner. The committee's report is expected to be completed in Fall 1987.

ILAR STAFF

The following ILAR staff members participated in the work funded by core support during the program period:

Earl W. Grogan, Director
Dorothy D. Greenhouse, Senior Program Officer
Andrea L. Cohen, Staff Associate
Evelyn E. Bracey, Administrative Secretary
Joyce B. Sherfey, Senior Secretary

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